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### REMARKS

Claims 1-29, 33-35, 38-41, 44-47 and 50-53 are pending in the application.

Claims 1-29, 33-35, 38-41, 44-47 and 50-53 have been rejected.

Claims 5, 10, 15, 20 and 25 are objected to.

Claims 5, 10, 15, 20 and 25 are amended.

### Claim Objections

The Office Action objects to claims 5, 10, 15, 20 and 25 for the reason that the claimed term “fourth class” should be replaced with the term “third class.” Applicants have amended claims 5, 10, 15, 20 and 25 to provide the claim language suggested by the Office Action. Applicants therefore respectfully submit that the objections stated in the Office Action have been rendered moot by these claim amendments.

### Rejection of Claims under 35 U.S.C. § 102

Claims 1-29, 33-35, 38-41, 44-47 and 50-53 are rejected under 35 U.S.C. §102(b) as being anticipated by Gottlob et al., “Extending Object-Oriented Systems with Roles” (“Gottlob”). Applicants respectfully traverse this rejection.

Independent claims 1, 6, 11, 16 and 21 each contain limitations of substantially the following form:

- Inheriting of the first attribute by the lower level class, wherein  
the first attribute is within a first domain with regard to the upper level  
class,

the first attribute is within a second domain with regard to the lower level class,  
 a second domain value set of the second domain is smaller than a first domain value set of the first domain, and  
 the first attribute is restricted to the second domain value set upon the inheriting; and

- associating an object of the plurality of objects with a chosen class,  
 wherein... the chosen class is chosen such that, for the object, every attribute assigned to the chosen class has a none-null value used to describe the object.

*See, e.g., Claim 1.* Applicants respectfully submit that the sections of Gottlob cited by the Office Action fail to provide disclosure of at least these limitations of the independent claims and that, therefore, Gottlob cannot anticipate the present invention under 35 U.S.C. §102(b).

The limitation represented by the first bullet point provides for first and second domains associated with the claimed upper and lower level classes, respectively. The Application provides that “attributes are defined by a domain which describes a set of values that describes the attribute.” *See, Application, p. 3, ll. 19-20.* The sections of Gottlob cited by the Office Action appear to associate the claimed “first attribute” with Gottlob’s “instance variable.” However, the Office Action is silent as to a purported element of disclosure in Gottlob corresponding to the claimed “domains.” The section of text cited by the Office Action as purportedly disclosing the “inheriting” limitation only describes purported inheritance of instance variables to sub-classes. *See Gottlob, p. 270,*

¶ 1. Figures 2 and 3, which are also cited by the Office Action, purport to show instances of classes in which the instance variables are set. But Applicants respectfully submit that neither the text nor the figures illustrate a domain of possible values that describe an attribute (e.g., Gottlob's "instance variable"). While the figures do illustrate specific instance values, they do not illustrate (a) a set of possible values, or (b) an inheritance of domain ranges between a first and second domain set as claimed.

Applicants further submit that one would not expect Gottlob to provide disclosure of the claimed domains or the behavior of those domains. The portion of Gottlob, from which the Office Action cites, purportedly relates to class hierarchies and instance variables of classes and associating entities with an appropriate class, or sub-class, within the hierarchy. The sections are also concerned with purported inheritance of instance variables by the classes and sub-classes of the hierarchy and not with a range of values restricting the instance variables, as provided by the claimed domains of the present invention. Applicants respectfully submit that nothing within the cited sections of Gottlob suggests that Gottlob even contemplates the need for providing such a restriction as provided by the claimed domains. Further, Gottlob's disclosed finding a most specific class for an object does not provide the restrictions to instance variables associated with domains, it merely associates the specific values associated with the object to the instance variables for that object.

Further, Gottlob cannot be argued to inherently provide the claimed domains because nothing in Gottlob suggests the association of domain value sets between first and second domains in upper and lower level classes, as claimed. Nor does any disclosure in Gottlob suggest that such must necessarily result.

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For at least these reasons, Applicants respectfully submit that Gottlob fails to provide disclosure of the “inheriting” limitation of the independent claims.

Applicants further respectfully submit that the Office Action fails to establish that Gottlob provides disclosure of “associating an object of the plurality of objects with a chosen class, wherein... the chosen class is chosen such that, for the object, every attribute assigned to the chosen class has a non-null value used to describe the object,” as claimed. The section of Gottlob cited by the Office Action provides the following:

In a class hierarchy, every real-world entity is represented as an instance of the most specific class for which it qualifies. An instance stores a value for each instance variable defined in or inherited by its class.

See Gottlob, p. 273, ¶ 2. Thus, Gottlob provides that the entity-class relationship is determined by whether the entity “qualifies” for a specific class. The cited section of Gottlob provides no indication that “qualifying” means that every attribute for the class (e.g., Gottlob’s “instance variables”) will have a non-null value, or that the entity-class relationship is determined because every instance variable of the class will have a non-null value, as claimed. Instead, Gottlob provides that “qualification” is purportedly related to the class descriptor (e.g., person, employee, etc.).

Applicants respectfully submit that Gottlob is not concerned with eliminating non-null values, as provided by the present invention, but is instead concerned with placing the entity in an appropriately described sub-class. For example, Gottlob describes tracking an “evolving object” or entity by changing that entity’s sub-class to ensure a proper relationship between the entity and sub-class. See Gottlob, pp. 273-74 (“If an entity acquires or abandons a role, it must be reclassified, e.g., promoting Mrs. Smith to a department manager involves” steps for creating an instance in the new class,

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copying instance variables from the old class, resetting references made to the old class to the new class, and deleting the instance in the old class). Thus, Applicants respectfully submit that Gottlob's entity-class relationship decision is not made with respect to whether each attribute of the associated class is non-null, as claimed, but instead is made with respect to the class descriptor. For example, in Figure 1, the "Student" class includes instance variables: "university," "major," "minor," and "phoneNo." A person qualifying for the "Student" class may have an undeclared major or minor, and thus those instance variables would be null for an entry for that person in the "Student" class. This illustrates that Gottlob doesn't contemplate choosing a class for a person such that every attribute (e.g., "instance variables") has a non-null value, as claimed.

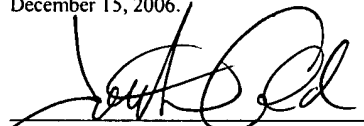
For at least these reasons, Applicants respectfully submit that Gottlob fails to provide disclosure of the claimed "associating" limitation of the independent claims.

For at least the above reasons, Applicants respectfully submit that Gottlob fails to provide disclosure of each and every limitation of independent Claims 1, 6, 11, 16 and 21, and all claims depending therefrom, and that they are in condition for allowance. Applicants therefore respectfully request the Examiner's reconsideration and withdrawal of the rejections as to these claims and an indication of the allowability of same.

CONCLUSION

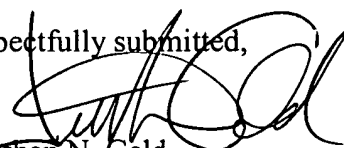
In view of the amendments and remarks set forth herein, the application and the claims therein are believed to be in condition for allowance without any further examination and a notice to that effect is solicited. Nonetheless, should any issues remain that might be subject to resolution through a telephonic interview, the Examiner is invited to telephone the undersigned at 512-439-5090.

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Mail Stop Amendment, COMMISSIONER FOR PATENTS, P. O. Box 1450, Alexandria, VA 22313-1450, on December 15, 2006.

  
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12/15/2006  
Date of Signature

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